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Macroeconomics, Economic Crisis and Electoral Outcomes: A National European Pool

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ABSTRACT

An abundance of comparative survey research argues the presence of economic voting as an individual force in European elections, thereby refuting a possible ecological fallacy. But the hypothesis of economic voting at the aggregate level, with macroeconomics influencing overall electoral outcomes, seems less sure. Indeed, there might be a micrological fallacy at work, with the supposed individual economic vote effect not adding up to a national electoral effect after all. Certainly that would account for the spotty evidence linking macroeconomics and national election outcomes. We examine the possibility of a micrological fallacy through rigorous analysis of a large time-series cross-sectional dataset of European nations. From these results, it becomes clear that the macroeconomy strongly moves national election outcomes, with hard times punishing governing parties, and good times rewarding them. Further, this economy-election connection appears asymmetric, altering under economic crisis. Indeed, we show that economic crisis, defined as negative growth, has much greater electoral effects than positive economic growth. Hard times clearly make governments more accountable to their electorates.

KEYWORDS

Economic voting; Macroeconomics; Economic crisis; Time-Series-Cross-Sectional data; Micrological fallacy

SUMMARY

The first studies on economics and elections forged macrolevel links. Different macroeconomic indicators sometimes showed themselves determinants of national incumbent support, measured in votes or popularity. [See the reviews of Nannestad and Paldam (1994); Norpoth (1996); Lewis-Beck and Stegmaier (2000).] The inference is that democratic voters are economic, rewarding the government for good times, and punishing it for bad. However, this inference, reported by itself, remains suspect because of the *ecological fallacy* (Kramer, 1983; Robinson, 1950). That is, individual voters may not act this way, in which case observed national economy-election patterns are spurious. To counter this possibility, studies have moved to the microlevel, examining voters in election surveys. These efforts were initially on individual democracies – notably the United States, France, Denmark, the United Kingdom. [See, as examples, respectively, Kiewiet (1983); Lewis-Beck (1983); Borre (1997); Sanders (2003).] Then, investigations became evermore micro and comparative, stretching across larger and larger samples of nations (Duch and Stevenson, 2008; Lewis-Beck, 1988). Over a broad range of democracies, in time and space, survey work supports the economic voter hypothesis. [See the current reviews of Duch (2007); Hellwig (2010); Lewis-Beck and Stegmaier (2007).] With minor caveats, then, the ecological fallacy argument has not been sustained.

However, another classic, the *fallacy of composition,* has not received the scrutiny it deserves (Blackburn, 2008: 69). That fallacy occurs when the truth of the part is not true for the whole. An opposite of the ecological fallacy, we label it here the *micrological fallacy*, a usage paralleling the micro/macro distinction in economics (where what makes sense at the micro-level may not make sense at the macro-level, as the notorious Paradox of Thrift illustrates). Specifically in election studies, while individual voters may appear to be economic voters, all voters taken together may not reflect the changing state of the economy. Put another way, the collective vote of the national electorate might not respond to national economic conditions, despite a seemingly supportive microfoundation. If this micrological fallacy holds, then the importance of the economic vote declines greatly. Why? Because it would suggest that economic evaluation, as expressed by individual citizens, does not ultimately hold the government accountable. A government presiding over bad national economic conditions, such as poor growth or rising unemployment, could escape punishment at the ballot box. Democracy, then, stands badly served. Using a formidable database of European nations, we examine whether national governments, in fact, are punished (or

rewarded) by votes on the basis of national economic performance. We look at the general case, voting in normal times, then at voting in times of crisis. Of special interest is the possibility that governments are held still more accountable for the economy during crisis periods.

Below, we look at relevant literature and theory, where we elaborate on the possibilites for the micrological fallacy. That discussion leads to the formulation of two hypotheses for testing, with regard to the relationship of macroeconomics and electoral outcomes, one hypothesis for normal times and another for times of crisis. Then we discuss our European data pool and our politico-economic measures, followed by an explication of our methodology. Our estimated equations are presented in three parts: static, dynamic, and crisis. In conclusion, we reconcile the micrological fallacy, and trace a myriad of macroeconomic effects on European electoral outcomes.

LITERATURE AND THEORY

The scope of the economic voting literature, now estimated at over 500 articles and books, makes its summary difficult (Stegmaier and Lewis-Beck, 2012). However, it can be simplified by focusing theoretically on the classic economic voting paradigm, and substantively on the relevant comparative findings. With respect to theory, the organizing idea is retrospective economic voting, wherein the voter judges the economic record of the government, rewarding or punishing accordingly at the ballot box (Fiorina, 1981; Key, 1966; Lewis-Beck, 1988). With respect to comparative findings, we examine essentially European studies, first at the microlevel, then at the macrolevel. Reviewing the microlevel investigations, where the data are national surveys and the dependent variable is a measure of the incumbent vote, they converge on the notion that sociotropic economic evaluations matter (Anderson, 2000; Duch and Stevenson, 2008; Fernandez-Albertos, 2006; Hellwig, 2008; Lewis-Beck et al., 2008; Nadeau et al., 2013; van der Eijk et al., 2007). When the respondent perceives the economy has worsened over the past year, they are significantly more likely to declare a vote against the government (coalition).

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The micrological fallacy stands opposite of the ecological fallacy. While both are fallacies of inference, the latter makes the mistake of inferring the part from the whole, e.g., inferring individual economic voting from aggregate patterns connecting macroeconomic

indicators and election outcomes. The former, in contrast, makes the mistake of inferring the whole from the part, e.g., inferring an aggregate economics-elections connection from individual patterns of economic voting. In comparative economic voting research, the door stands open to the commitment of a micrological fallacy, given the contradiction between the micro-level, individual survey results and the macro-level, aggregate results. That is, strong micro-findings co-exist with *weak to non-existent* macro-findings. Two initial micro-possibilities might explain this apparent inconsistency First, individual economic perceptions of the national economy could be based on error. Second, these economic perceptions could be accurate, but not add up to the observed macroeconomic condition.

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The two foregoing individual-level possibilities for inducing a micrological fallacy concern the "part" of the "whole." There is also a third (aggregate-level) possibility, concerning just the "whole" - the measurement of the macroeconomy itself. Obviously, if at the aggregate-level the economy is improperly, or incompletely, measured in a model predicting electoral outcomes, then its effect might not register. As noted, the leading measures have been versions of unemployment, inflation, or growth (at different lags). We would argue that the growth variable stands least likely to feed the micrological fallacy, because of its empirical precision and conceptual breadth. GDP growth, as Norpoth et al. (1991: 5) suggested some time ago, allows us to formulate models with an economic indicator "as global as possible….to capture the shifting weighting scheme utilized in the political economic calculus of the democratic voter." This measurement strategy receives support, in a preliminary way, in the findings of Wilken et al. (1997). Their early cross-sectional examination of 38 world elections (from developed and underdeveloped democracies, 1988-1994) concludes that for "every percentage point of GDP growth in the election year, [the incumbent] party stands to gain 1.4 percent of the vote." (Wilken et al., 1997: 307). Further, more recent economic voting work, by Singer (2011a) and Van der Brug et al. (2007), explicitly supports the use of GDP growth, over inflation and unemployment measures, on grounds that it yields the largest effect.

These foregoing considerations lead us to our first hypothesis:

H1: Positive (negative) GDP growth yields increases (decreases) in incumbent vote support.

We expect H1 to be supported as a general proposition, when tested against our macro-data-set on European electorates. Such support would be all to the good for, as Paldam (1991: 11) observes: "it is highly desirable if models are general and institution free, so that the same basic model works across countries and over time." After all, the model being tested derives itself from the pure theory of the economic vote. However, as subsequent research has shown, the economic vote, even if a pure force, can be conditioned by institutions and events (Nadeau et al., 2002; Powell and Whitten, 1993). Therefore, we do explore further tests, especially on the clarity of responsibility idea, as shall be seen below.

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More specifically, in times of economic recession, the economy would have more salience to voters. For one, that information on the economy is more easily accessible in times of crisis, according to the work of (Singer, 2011a). Further, Singer (2011b) shows that during an economic recession more citizens perceive the impact of the economy on their personal situation. These findings accord with the earlier European results from Nannestad and Paldam (1997), who showed the presence of a grievance asymmetry at the individual level. Danish voters' evaluations of the economy were stronger predictors of support for government parties when voters perceived a worsening economy, as opposed to an improving economy. However, not all micro-studies support such a result. Lewis-Beck and Stegmaier (2013), in their current review of the problem, conclude that overall micro-level evidence on the asymmetry hypothesis is "mixed." With regard specifically to its presence in times of economic crisis, the debate still continues [for a review there, see Singer, 2011a]. Given the different theoretical arguments (and scattered empirical evidence) for an asymmetric economic vote induced by the condition of crisis itself, we tentatively offer our second hypothesis:

H2: During economic crisis, GDP growth relates more strongly to incumbent vote support.

DATA AND MEASURES

The dataset covers 359 elections in 31 European countries. While countries outside of Europe are not covered, the focus on this region allows near-exhaustive coverage in a large and balanced national time series pool, from 1950 onwards. Furthermore, recent financial and economic crises warrant a focus on the European context. Several European countries have

suffered severely in the post-2008 period, in a pattern of crisis referred to as a "domino effect", because of the interdependence of these economies within the European Union (Bellucci et al., 2012: 469). While the crisis has had an especially profound impact in the European periphery (Lewis-Beck and Nadeau, 2012), overall considerable variation exists in the lived experiences of these European economics (LeDuc and Pammett, 2013). Even though European countries share similarities, their substantial differences remain. This combination of unity and diversity, then, makes Europe an ideal context to test theories of economic voting (LeDuc and Pammet, 2013).

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We include the countries in Central and Eastern Europe, as well as those of Western Europe, repeatedly and regularly measured over time. For almost all Western European countries the time series starts in 1950. For Central and Eastern European countries, the data usually begin around the mid-nineties (when they devised functioning competitive elections). These time frames then, correspond to the periods in which democracy was clearly established, a prerequisite for testing our hypotheses. (With respect to Germany, before unification only West Germany is included, but from 1989 onwards the unified country is included. Both are treated as separate countries in the analyses). The full set of countries (31), and elections (359), is quite heterogeneous, as can be observed in the listing of Table 2.

TABLE 2. Cases included in the analyses

Country	#	%	Period
Austria	18	5.01	1953-2008
Belgium	18	5.01	1954-2010
Britain	15	4.18	1955-2010
Bulgaria	5	1.39	1994-2009
Cyprus	7	1.95	1981-2011
Czech Republic	5	1.39	1996-2010
Denmark	23	6.41	1953-2011
Estonia	5	1.39	1995-2011
Finland	16	4.46	1954-2011
France	15	4.18	1956-2012
Germany	5	1.39	1994-2009
Greece	14	3.90	1977-2012
Hungary	5	1.39	1994-2010
Iceland	19	5.29	1953-2013
Ireland	17	4.74	1953-2011
Italy	16	4.46	1953-2013
Latvia	5	1.39	1995-2011
Lithuania	5	1.39	1996-2012
Luxembourg	12	3.34	1954-2009
Malta	10	2.79	1966-2008
Netherlands	19	5.29	1952-2012
Norway	15	4.18	1953-2009
Poland	6	1.67	1993-2011
Portugal	11	3.06	1980-2011
Romania	6	1.67	1992-2012
Slovak Republic	6	1.67	1994-2012
Slovenia	6	1.67	1992-2011
Spain	10	2.79	1979-2011
Sweden	19	5.29	1952-2010
Switzerland	15	4.18	1955-2011
West Germany	11	3.06	1953-1990
Total	359	100.00	1952-2013

METHODS

The data compose a time-series-cross-section (TSCS), a structure to be taken into account when modeling. Therefore, different approaches were considered. As a baseline, we estimated static models on the effects of different variables on incumbent vote share (without controlling for the previous electoral score of the incumbents). Different modeling strategies were investigated. First, a naïve pooled ordinary least squares model was examined, its standard errors corrected for the country-clusters. Second, a fixed effects (FE) model was developed, in which the country-level effects were simply controlled for by means of country-dummies (Allison, 2009). Third, a random effects generalized least squares (GLS) model was applied, enabling us to fit an estimator that controls for heteroskedasticity and autocorrelation.

Fourth, because in general the estimates of a GLS estimation are less efficient, a random coefficient model was estimated by means of a maximum likelihood (ML) procedure as well (Hox, 2010). After static models were explored, dynamic models were developed, with a control on the effect of the electoral result of incumbent parties in the previous election (as a lagged dependent variable – LDV). As with the static models, four approaches were investigated; an OLS pooled model, a fixed effects model, a random effects GLS model and a random effects ML model.

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MAIN RESULTS

The analyses presented in Table 3 are encouraging. First, regardless of whether we consider a static or a dynamic model, the fit statistics are strong according to the R^2-values. With respect to the independent variable effect, we begin the discussion with Model 1. Looking at the control variables, two attain statistical significance. These results suggest that as the number of parties in government increases, the incumbent vote share increases. Furthermore, the incumbent vote share will tend to be smaller, when the system in general has a larger number of parties. Finally, whether a caretaker government was in office before the election does not significantly affect the incumbent vote share. These structural results are comforting, if unsurprising. What about our main variable of interest, GDP? We observe that it appears to have a statistically significant and substantively important effect. Specifically, a one percentage increase in GDP growth yields about a 0.7 percentage point increase in incumbent support. This is a rather large effect, falling as it does not far from unit elasticity (with its 1:1 percentage ratio).

TABLE 3. Effect of the economy on incumbent vote shares

	Model 1: Static *FE PCSE*	Model 2: Dynamic *FE PCSE LDV*
Incumbent vote share (e-1)		0.844***
		(0.043)
GDP growth	0.713**	0.737***
	(0.214)	(0.146)
Caretaker government	3.190	2.136
	(2.670)	(1.519)
ENEP (e-1)	-2.614***	0.780
	(0.493)	(0.438)
Number of parties in government	7.009***	0.347
	(1.013)	(0.576)
Constant	56.629***	2.730
	(4.937)	(3.318)
Country FE	Yes	Yes
$N_{elections}$	359	359
$N_{countries}$	31	31
R^2	0.611	0.809

Sign: * p<0.05; ** p<0.01; *** p<0.001 (two-tailed test). Panel corrected standard errors reported.

The Model 1 results do indicate strong economic effects. It could be argued, however, that in order to investigate the effect of the economy on electoral success and failure, starting points have to be taken into account. More specifically, it may be that current incumbent support partly derives from past incumbent support. At the microlevel, that process would operate through something like the persistence of partisan identification. At the macrolevel, in addition to picking up that pattern, past vote share would tap into independent variables omitted from the model specification (including missing variables on political context or issues, such as immigration or crime). Thus, it acts as a very strong control, increasing predictive power and applying a tough test for the survival of GDP effects. Furthermore, the reported presence of serial autocorrelation in Model 1 argues for the inclusion of a lagged dependent variable. In Model 2, therefore, we take Model 1 a step further, including incumbent vote share in the previous election as an independent variable.

As such, Model 2 incorporates a time component, becoming dynamic and providing further insight into the effect of the economy. According to its estimates (see column 2, Table 3), the effect of the GDP growth rate remains significant, even increasing its level (to $p < .001$). Moreover, its strength persists. Indeed, the size of its coefficient is about equal for both modeling approaches (at 0.7). We can say, with more confidence, that the state of the economy affects incumbent support on election day. Further, the explanatory power of Model 2 is considerably higher, with an R^2-value indicating that about 80% of the variance in

incumbent vote share is explained. Last, but not least, we can report that building on this specification we tested the possibility of interaction effects relating to the clarity of responsibility hypothesis (Powell and Whitten, 1993); no significant results were found there.[i] These null findings are almost certainly due to the powerful controlling effects of the lagged incumbent vote share variable on the right-hand side, and its capturing of the influence of omitted variables).

CRISIS RESULTS

Our first hypothesis, on the relationship of GDP growth and incumbent support, receives strong confirmation from the findings in Table 3. What about our second hypothesis, where we expect the economy to relate more strongly to incumbent electoral success during an economic crisis? In order to investigate this possibility different approaches are taken. First, we examine whether the link between the economy and incumbent vote share is more pronounced after the recent economic and financial crisis, begun in 2008. We investigate this by means of a simple crisis-dummy, scored one for elections from 2008 onwards (i.e., 41 out of the 359 elections) and zero otherwise. For testing, we explore the impact of this crisis dummy by itself, and in interaction with the GDP variable. These estimates appear in Table 4. The simple 2008 crisis dummy falls far short of statistical significance in both the static and dynamic models (see, respectively, columns 1 and 3). Further, the interaction crisis term falls far short of significance in the static model, and only achieves marginal significance in the dynamic model. These null, fragile results lead us to the following conclusion: while the incumbent governments of Europe may have been punished by the post-2008 economic crisis, that punishment has been no greater than for economic downturns occurring in other periods. The 2008 economic crisis, then, has not engendered unique effects on incumbent party vote shares of the region.

The fact that the economic blows falling on elected governments after 2008 are not unique does not mean that they were not real blows. But it does mean that another process may be going on. Perhaps economic crisis, rather than being temporally specific, works whenever the economy takes a serious downturn. In other words, the crisis period need not be, in fact should not be, time bound. Thus, we focus on economic downturn in general, by modeling spline regressions. Recall that spline regression has value when the research question concerns what produces differences in slope (Marsh and Cormier, 2002). Operationalizing zero GDP growth as the turning point (and therefore the spline knot), we can investigate whether the GDP growth effect is more or less pronounced depending if it is

positive or negative. Thus, we investigate differences in the size of the effect for negative and positive GDP growth rates, respectively. In order to estimate such a spline regression model, two variables are created. A first variable, called GDP (-) corresponds to GDP growth rates if these are negative, but takes on the value of 0 otherwise. The second variable, called GDP (+) has values corresponding to the GDP growth rates when these are positive, but takes on a value of 0 otherwise. Doing so we use the natural and straightforward zero threshold for investigating asymmetric economic effects first offered by Nannestad and Paldam, 1997).

Applying this spine regression approach, we can observe any differential effects (see columns 2 and 4, Table 4). Are negative GDP growth rates more determining for incumbent vote share? The results of the spline regression models in Table 4 confirm this expectation. In the static, as well as in the dynamic, models both the effects of positive and of negative GDP growth attain significance. Additionally, in the two models, the coefficient for negative economic growth is larger than the coefficient for positive economic growth. Clearly, the results are robust and straightforward: negative economic growth has more importance for incumbent electoral results. While the coefficients differ depending on the specific model, the negative spline coefficient approaches twice the magnitude of the positive spline coefficient (respectively, .99/.63 and 1.00/.66). These findings suggest that the effect of the economy, looked upon from a macro-perspective, almost doubles in times of economic recession, compared to times of economic growth. Both coefficients are positive, indicating that as the economy is doing better, incumbents obtain a larger share of the votes. For example, moving from a -2% to a -1% GDP growth rate has close to twice the effect on incumbent support, compared to moving from 1% to 2% GDP growth rate. Clearly, economic crisis, understood as the general phenomenon of negative economic growth, intensifies the impact of GDP change on incumbent vote, so supporting our second hypothesis.

TABLE 4. Crisis effects

	Model 1: Static *FE PCSE*		Model 2: Dynamic *FE PCSE LDV*	
	Interaction Crisis*GDP	Splines regression	Interaction Crisis*GDP	Splines regression
Incumbent vote share (e-1)			0.845***	0.844***
			(0.041)	(0.043)
GDP growth	0.575*		0.601***	
	(0.244)		(0.143)	
Negative GDP growth		0.988*		1.001**
		(0.474)		(0.387)
Positive GDP growth		0.631*		0.657***
		(0.267)		(0.146)
Post-2008 crisis	-3.668		-1.951	
	(2.219)		(1.576)	
Post-2008 crisis*GDP growth	0.322		0.675*	
	(0.303)		(0.319)	
Caretaker government	3.442	3.434	2.448	2.370
	(2.646)	(2.731)	(1.486)	(1.528)
ENEP (e-1)	-2.640***	-2.627***	0.810	0.768
	(0.494)	(0.504)	(0.426)	(0.449)
Number of parties in government	7.132***	7.032***	0.355	0.370
	(1.019)	(1.028)	(0.543)	(0.596)
Constant	57.103***	56.916***	3.001	3.010
	(5.048)	(5.036)	(3.316)	(3.394)
Country FE	Yes	Yes	Yes	Yes
$N_{elections}$	359	359	359	359
$N_{countries}$	31	31	31	31
R^2	0.615	0.611	0.812	0.810

Sign: * p<0.05; ** p<0.01; *** p<0.001 (two-tailed test). Panel corrected standard errors reported.

CHALLENGES

Thus far, we have found strong support for our two central hypotheses, in terms of the functioning of these European democracies. First, in general, economic growth relates to incumbent vote support as expected. In particular, negative economic growth generally yields decreases in incumbent vote support. Second, the relationship between economic growth and incumbent vote support strengthens under economic crisis. In particular, it takes an asymmetric form, with negative economic growth having a greater impact than positive economic growth. As firm as these findings appear to be, they are not immune from challenge. In this section, we consider several relevant challenges, from the measurement of the dependent variable of incumbent vote and the independent variable of economic performance, to the specification of the non-economic independent variables. Below, we

consider these in turn, beginning with the measurement questions, and ending with the specification questions.

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CONCLUSION

Economic voting seems undeniable, according to the numerous micro-level, election survey studies undertaken around the democratic world. These results refute the charge of an ecological fallacy, with respect to the inference that economic perceptions influence vote choice. However, economic voting theory has another charge to overcome, that of commiting a micrological fallacy. We have argued the plausiblity of the notion that, while individual citizens may be economic voters, the entire electorate itself may not act like an economic voter. In other words, those individual economic vote choices might not add up to a macroeconomic impact on the incumbent government's vote share. This possibility we base not only on logic, but on the weak empirical results from numerous aggregate investigations, which have attempted to link macroeconomic fluctuations to overall electoral outcomes.

Herein, we attempt to show a micrological fallacy has not been committed, by demonstrating an unambigous connection between GDP growth and aggregate incumbent vote share in European democratic elections. We explore a very large pool of elections (359) from many countries (31) over an extended time period (1950-2013). While the countries confine themselves to the European continent, they nevertheless represent considerable political and economic heterogeneity. Our analyses, and their various challenges, reveal sharp and powerful effects. In general, a one percentage point change in economic growth produces almost a three-quarter percentage point change in incumbent vote support. This clear confirmation of our first hypothesis has merit in its own right. However, it has a double importance, by its refutation of the micrological fallacy. That macro-refutation of the micrological fallacy, along with the micro-refutation of the ecological fallacy, make for a perfect marriage. With unparalleled confidence, we can assert that economic voting is real, and really matters.

This confidence allowed us to pursue our second hypothesis with vigor. Economic crisis alters the impact of growth on the vote, rendering it asymmetric. Economic crisis, defined as negative GDP growth, can occur anywhere along the time line. And, when these bad economic times occur, its electoral impact is magnified, compared to economic good times. Specifically, the cost in incumbent votes from an economic bust (e.g., a negative

growth of – 1%) comes to about double the benefit in incumbent votes received from an economic boom (e.g., a positive growth of +1%). Thus, we see that governments are punished more for bad economic policy, than they are rewarded for good economic policy. Perhaps that is as it should be, for it pushes governments to work harder at reducing mass hardship. Further, this asymmetry in reward and punishment suggests that leaders are held especially accountable for poor performance. If so, it serves as a useful reminder to elected officials that the people are paying attention.

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[i] Results are not shown, but are available from the authors on request.